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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/622,348	CHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Djura Malevic	2878	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/19/2003.
2. ☒ The allowed claim(s) is/are 1-8.
3. ☒ The drawings filed on 7/19/2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

## DETAILED ACTION

### ***Allowable Subject Matter***

Claims 1-8 are allowed.

The following is an examiner's statement of reasons for allowance: ✓

Regarding claim 1, the prior art of record does not teach or reasonably suggest an ultraviolet detector comprising a P-type GaN layer, in which the P-type GaN layer envelops a first N-type GaN layer which further envelops a second N-type GaN layer also extended to the same top end thereof, meaning that all three layers extend to the top. Furthermore, an annular and another metallic layer are formed on the top end in an annular zone between the P-type and the first N-type GaN layer and in a circular zone inside the second N-type metallic layer to form a P-type ohmic contact electrode as well as an N-type ohmic contact electrode. Although, references like Nikolaev et al. (US 6,849,862) discloses a semiconductor structure (Fig. 18) in which the order of the P-type and N-type are comparable, Nikolaev does not suggest any modification to overcome the applicant's claim.

Regarding claim 2, the prior art of record does not teach or reasonably suggest a method of manufacturing of an ultraviolet detector comprising steps of distributing and vegetating  $\text{Si}^+$  ions in the P-type GaN layer completed in forgoing step to form a first N-type GaN layer extending from top end of the P-type GaN layer to form an optimum scope. Furthermore, distributing and vegetating  $\text{Si}^+$  ions in the N-type GaN layer completed in foregoing step to form a second N-type GaN layer capable of releasing much more electrons and also extending from top end of the first N-type GaN layer to

form an optimum scope by way of using ion-distribution and vegetation technology and adopting optimum photomask. Although, references like Goldenberg Barany et al. (US Patent 5,923,953) disclose methods of manufacture, Goldenberg does not teach or reasonably suggest any modification to overcome the applicant's claim.

Claims 3 – 8 are dependent of claim 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djura Malevic whose telephone number is (571) 272-5975. The examiner can normally be reached on Monday thru Friday between 8:30 to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Djura Malevic  
Patent Examiner  
Art Unit 2878  
571.272.5975



**DAVID PORTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**